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Research Article / Araştırma

Turkish validity and reliability study of perceived neighbourhood disorder scale

Algılanan mahalle bozukluğu ölçeğinin Türkçe geçerlik ve güvenilirlik çalışması

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ABSTRACT

Introduction: The neighborhood (environment) in which a person lives has a significant impact on their physical and mental health. Being surrounded by fear, crime, violence, graffiti, trash, noise, fights, drink, and drugs can have a detrimental effect on one's wellbeing. **Objective**: This study used a systematic approach to examine the reliability and validity of the Perceived Neighbourhood Disorder Scale in Turkey. **Method**: The purpose of the study was to ascertain how residents over the age of 19 and between the ages of 13 and 18 saw their neighborhood. According on the results of this questionnaire, validity and reliability analyses were conducted. The governorship, the school administration, families, and students all gave their assent before the surveys were distributed between January 30 and March 30, 2019. A total of 590 participants participated in this study. **Findings**: The Perceived Neighbourhood Disorder Scale's exploratory factor analysis Cronbach's Alpha (α) coefficient was calculated in the study to be 0.869, and the explained variance ratio was 65.258%. For the outcomes obtained from fit indices in the confirmatory factor analysis, the chi-square test was calculated as 2.433, RMSEA as 0.049, CFI as 0.969, and GFI as 0.957. According to the fit index values, it was found that the produced model fit quite well. **Conclusion**: The results of our study indicate that the Turkish version of the Perceived Neighbourhood Disorder Scale is an accurate and trustworthy measurement tool. Future study in Turkey is advised to make use of this questionnaire.

ÖZ

Giriş: Bireyin yaşadığı çevre (mahalle), fiziksel ve ruhsal sağlığı için son derece önemlidir. Korku, suç, şiddet, duvar yazıları, çöp, gürültü, kavga, alkol ve uyuşturucu ile karakterize bir mahallede yaşamak bireysel refahı olumsuz etkileyebilir. **Amaç**: Bu çalışma, Algılanan Mahalle Bozukluğu Ölçeği'nin Türkçe geçerlilik ve güvenilirliğini test etmek amacıyla metodolojik olarak yapılmıştır. **Yöntem**: Araştırma, 13-18 yaş arası ve 19 yaş üstü bireylerin mahalle algısını belirlemek amacıyla düzenlenmiştir. Bu anketten elde edilen sonuçlar doğrultusunda geçerlilik ve güvenilirlik analizleri yapılmıştır. Anketler 30 Ocak – 30 Mart 2019 tarihleri arasında valilik, okul yönetimi, aile ve öğrencilerin onayı ile uygulanmıştır. Bu çalışmada toplam 590 kişiye anket uygulanmıştır. **Bulgular**: Araştırmada Algılanan Mahalle Bozukluğu Ölçeği için açımlayıcı faktör analizi Cronbach Alpha (α) katsayısı 0,869, açıklanan varyans %65,258 olarak hesaplanmıştır. Doğrulayıcı faktör analizinde uyum indekslerinden elde edilen sonuçlar için ki-kare testi 2,433, RMSEA 0,049, CFI 0,969 ve GFI 0,957 olarak hesaplanmıştır. Elde edilen modelin uyum indeksi değerlerine göre iyi uyum gösterdiği görülmüştür. **Sonuç**: Çalışmamızda elde edilen bulgular sonucunda; Algılanan Mahalle Bozukluğu Ölçeği'nin Türkçe formu geçerli ve güvenilir bir ölçme aracıdır. Türkiye'de ileride yapılacak araştırmalar için bu anketin kullanılması önerilmektedir.

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INTRODUCTION

Definition and Importance of the Problem

The individual is a biopsychosocial being that is partially moulded by the environment but also works to create environments that allow the full expression of one's innate and learned human potential. As a result, there is a reciprocal interaction between humans and the environment (Pender, 2011; Walker, 2011). According to Smalls, Gregory, Zoller, and Egede (2015), social determinants of health are the social environmental elements that have an impact on the health of individuals and communities. Particularly, both the factual and subjective components of our quality of life are influenced by the dangerous and protective characteristics of our daily settings. The results of an individual's health, including their degree of welfare and engagement in physical activity, are influenced by neighborhood-level variables connected to interpersonal contexts (social norms, social cohesion, membership in community groups, etc.) (Milfont & Denny, 2017).

The "social networks and social ties" that make up a neighborhood's social structure include things like social integration, social capital, joint activity, social norms, poverty, neighborhood crime, and security. The likelihood of engaging in outdoor and physical activity can be increased by a favorable view of the neighborhood's social environment. Parents could be more inclined to let their kids play outside, for instance. Increased levels of group activity and social cohesion offer more chances to demonstrate healthy behaviors in a welcoming setting, as well as to stop the physical environment from deteriorating (garbage, streetlights, noise, graffiti), and to ensure physical safety (Suglia et al., 2016). However, in unstable societies, it is impossible to build up a large social capital, and this puts pressure on social control mechanisms, which in turn leads to mistrust of others, social isolation, and negative health effects. The class, income, and racial makeup of the neighborhood where individuals live are frequently considered insalubrious features at the societal level. However, in order to understand how the environment affects health, the majority of studies defined crime rates, criminal threat, local issues, physical dangers, pollution, noise, and similar elements as neighborhood disorders. Many authors have covered these ideas from a variety of angles. Crum et al. conceptualized the perception of walkable areas or playgrounds, security, crime, racism, garbage, vandalism, the visible use of alcohol or drugs, abandoned buildings, graffiti, noise, dirt, and similar features as neighbourhood disorder (Spilkova, Dzúrova & Pitonak, 2014; Ross & Mirowsky, 1999). Neighbourhoods with such negative characteristics are described as disadvantaged neighbourhood.

According to epidemiological studies, the socioeconomic environment of underprivileged neighborhoods and mortality are related. Neighborhood violence, aesthetics, walking environments, activities, food insufficiency, neighborhood comparison, social cohesion, and social support were all found to have statistically significant connections with self-care behaviors and results, according to Smalls et al. Residents' choices, current local health behaviors, access to health services, or their interactions with the social environment, such as neighborhood violence, may all have an impact on how the socioeconomic environment of their neighborhood affects their personal health outcomes (Anderson et al., 2002). Poor neighborhoods are more likely to have physical and social disorders, which include behaviors like drug use or physical characteristics like trash, graffiti, and abandoned buildings that show people exhibiting informal social control (Bjornstrom & Ralston, 2014). Children from many low-income homes and neighborhoods with more disadvantages scored worse on cognitive tests. Children are more likely to experience social and emotional issues if their parents have socioeconomic risks and neighborhood disadvantages (Jeon, 2013).

In addition to the importance of taking a holistic approach to the patient, nurses must be aware that an individual's environment, living situation, and societal cultural and behavioral norms have an impact on the development and well-being of many problematic behaviors, including aggression, criminal behavior, and substance abuse. In our country, there are very few scales that nurses can use to assess people's perceptions of their health in their social and personal environments as well as in their neighborhood perception and determine the risk characteristics in the neighborhood where they live that affect individual and public health. To define the features of the neighborhood where the individual resides, a validity and reliability research in Turkish was undertaken for this study.

METHOD

The screening model was utilized as one of the quantitative research approaches in this study with the goal of translating the scale into Turkish and applying validity and reliability evaluations. To make a general assessment of the population, this model contains sampling arrangements (by taking a number of samples) (Karasar, 2023). Cross-sectional planning and evaluation were used for our study.

Design of the Research

This research is a methodological study designed to ascertain how people between the ages of 13 and 18

and older perceive their neighborhood. Pre-test and post-test were administered to 87 teenagers in the heart of Tokat as part of a plot research. Based on the findings of these tests, validity and reliability evaluations were conducted. The scale was then used to 513 individuals once its validity and reliability were established, and the study was completed by gathering socio-demographic data. The governorship, the school administration, families, and students all gave their assent before the surveys were distributed between January 30 and March 30, 2019. 10 incorrect study forms were eliminated after an evaluation of the 513 people who submitted them. The study's questionnaire form is displayed in Annex 1.

Objective of the Research

The goal of the study is to acquire a validation-based measurement tool for neighborhood disturbance. It involves assessing the perceived neighborhood disorder scale for Tokat residents in light of their socioeconomic circumstances and examining individual variances in light of their demographic traits.

Sample Size

The sample size was estimated to be at least 590 people overall when the study's power analysis was conducted, with 80.09% power at the 5% type error level and 19.91% type 2 error (beta) level.

Data Sources

"Introductory Questionnaire" containing socio-demographic information and "Perceived Neighbourhood Disorder Scale (PNDS)" were used to collect data.

Introductory Questionnaire:

The "Introductory Questionnaire", organized by the researchers, consists of 12 questions including socio-demographic characteristics of adolescents such as age, gender, number of siblings, place of birth, education status of parents, working status of parents, family type, and chronic diseases.

Perceived Neighbourhood Disorder Scale (PNDS):

The Perceived Neighbourhood Disorder Scale (PNDS), developed by Ross and Mirowsky (1999), was used to functionalize neighbourhood perception in adolescents (Ross & Mirowsky, 1999). The Perceived Neighbourhood Disorder Scale consists of 4 concepts which are physical disorder, physical order, social disorder, and social order items. The items are scored using a 4-point Likert scale (Ross & Mirowsky, 1999; Ayres & Pontes, 2020). The scale has no cut-off point; it reveals that order and disorder are the two ends of a single continuum. The scores that can be obtained from the scale range from the lowest 15 points to the highest 60 points, and the higher scores indicate neighbourhood disorder. Scale scores are used to compare socio-demographic characteristics. For example; the individuals living in Chicago experience more neighbourhood disorders than out-of-residential areas. The 5th, 6th, 12th, 13th, 14th and 15th items in the scale are coded in reverse. In other words, the value "1" is used in the data set for the individuals who answered "4" in the reversed questions.

Language Equivalence and Content Validity

For language validity, a total of six language experts worked. Three experts translated the items of the scale from English to Turkish independently. Then, these experts came together and the final version of the Turkish items was formed. Three different experts translated the Turkish text from Turkish to English independently. Then, these three experts came together to form the final version of the English items. Six experts evaluated the formed Turkish text, the final English text and the scale items of the original text, and formed the final version of the Turkish text. The opinions of 20 experts were sought to ensure the content validity. The content validity rate of each item and the content validity index for all items were found to be above 0.70, and the content validity of the scale was provided.

Statistical Methods

The statistical software packages IBM SPSS Statistics for Windows (Version 25.0) and Amos (Version 24.0) were used to analyze the data. Unit number (n), percentage (%), mean and standard deviation (mean sd), median, lowest value, greatest value, and percentile values are all used in descriptive statistics.

The Kaiser- Meyer- Olkin test, the Barlett test, the divisibility into factors test, the internal consistency level between the items with the Cronbach's alpha coefficient, and the determination of the factor structure with main component analysis were all used to assess the validity of the scale. Test-retest, intragroup correlation coefficients, parametric and non-parametric techniques were used in paired samples to assess scale reliability. In order to discover correlations between the ideas of the scale, a Structural Equation Model (SEM) that is appropriate for confirmatory factor analysis was built and its accuracy was verified using fit index values (Demirsöz, Özel, Yonar, Tekin & Tekindal, 2021).

Following confirmation of the scale's reliability and validity, the overall scale and subscale scores were compared in light of sociodemographic factors. The

"Levene" test was used to examine the homogeneity of variances, one of the requirements for parametric testing. The "Shapiro-Wilk" test was used to verify the assumption of normality. When comparing the two groups, the "Student's t test" was used if the parametric test matched the requirements; otherwise, the "Mann Whitney - U test" was applied. One Way Analysis of Variance and the Tukey HSD test, one of the multiple comparison tests, were employed to analyze three or more groups when the presumptions were given. The Kruskal-Wallis and Bonferroni-Dunn tests, one of the multiple comparison tests, were utilized when the assumptions weren't given. The Pearson Correlation Coefficient measures the link between two continuous variables; if the parametric test did not pass the requirements, the Spearman Correlation Coefficient was used to assess it. Statistical significance was defined as $p<0.05$.

Ethical Responsibility

In the study, the ethics committee (Date:29.01.2019, decision no:11) and institution permissions were obtained. The purpose of the study was explained to the participants and their consents were also obtained.

Table 1 reveals that 53% of the participants were male and 47% of the participants were female, with graduates from primary school, secondary school, high school, and university totaling 11%, 26%, 36%, and high school, respectively. 91% of them were disease-free, compared to 9% who had chronic conditions. 78% of those who participated are part of a nuclear family.

Exploratory and Confirmatory Factor Analysis for Perceived Neighbourhood Disorder Scale:

Exploratory and Confirmatory Factor Analysis results for Perceived Neighbourhood Disorder Scale are presented in Table 2.

Table 1: Demographic Features

		n	%
Sex	Female	278	47.1
	Male	312	52.9
Education Status	Primary School	65	11.0
	Middle School	154	26.1
	High School	213	36.1
	University	158	26.8
Maternal education status	Illiterate	35	5.9
	Primary School	280	47.5
	Middle School	112	19.0
	High School	103	17.5
	University	60	10.2
Paternal education status	Illiterate	17	2.9
	Primary School	184	31.2
	Middle School	94	15.9
	High School	138	23.4
	University	157	26.6
Do you have any chronic diseases?	Yes	51	8.6
	No	539	91.3
Family Income	Income less than expenses	72	12.2
	Income equal to expenses	389	65.9
	Income more than expenses	129	21.9
Residency of the family	Village	71	12.1
	Town	8	1.4
	District	37	6.3
	Province	474	80.3
Family type	Nuclear family	460	78.0
	Extended family	112	19.0
	Separate parents	9	1.5
	Parental Loss	9	1.5
Total		590	100.0

A number in the range of 0.80-0.90 is regarded as being very good by the KMO test, which determines whether the distribution is adequate for factor analysis (Tanaka & Huba, 2003). As a result, it can be concluded that the KMO value in this study is very high. 3758.687 was the result of the Barlett test (p = 0.001). This result demonstrates that the variable we create in the universe parameter is multivariate. In this investigation, there was no restriction on the number of factors, and the scale only contained factors with eigenvalues greater than 1.50. In factor analysis, factors having an eigenvalue of 1 or higher are regarded as major factors (Shrestha, 2021).

It may be concluded that the quantity of variation acquired in this study is sufficient given that variance rates varying between 40% and 60% are regarded as desirable in factor analysis (Scherer, Luther, Wiebe & Adams, 1998).

As shown in Table 2, the factor loads of the questions in the first dimension (Physical Disorder) ranged from 0.485 to 0.782, those in the second dimension (Physical Order) ranged from 0.848 to 0.809, those in the third dimension (Social Disorder) ranged from 0.513 to 0.858, and those in the fourth dimension (Social Order) ranged from 0.697 to 0.811.

Since Croncbachs'Alpha (α) was greater than 0.70, it was deemed sufficient. Thus, the Perceived Neighbourhood Disorder Scale might be said to have 4 dimensions, each of which measured a different attribute (Demirsöz, Özel, Yonar, Tekin, and Tekindal, 2021). Based on these findings, we developed a survey that is an accurate measurement tool.

Four dimensions make up the model created for the Perceived Neighbourhood Disorder Scale ($\chi 2$= 197.069,

Table 2: Common Factor Variances and Factor Loadings for Perceived Neighbourhood Disorder Scale

Sub Dimension Names	Questions	Factor Loadings			
		1	2	3	4
Physical Disorder	1. Mahallemde birçok duvar yazısı var.	0.782			
	2. Mahallem gürültülüdür.	0.770			
	3. Mahallemde vandalizm (şiddet eylemleri) yaygındır.	0.635			
	4. Mahallemde birçok terkedilmiş bina var.	0.485			
Physical Order	5. Mahallem temizdir.		0.848		
	6. Mahallemdeki insanlar ev ve apartmanlarına iyi bakarlar.		0.809		
Social Disorder	7. Evimin yakınlarında aylak aylak dolaşan bir çok insan var.			0.858	
	8. Mahallemde çok fazla uyuşturucu kullanımı var.			0.827	
	9. Mahallemde çok fazla alkol kullanımı var.			0.826	
	10. Komşularımla sürekli sorun yaşarım			0.725	
	11. Mahallemde çok suç işlenmektedir.			0.513	
Social Order	12. Mahallemde insanlar birbirine göz kulak olur.				0.811
	13. Mahallemde polis koruması yeterlidir.				0.777
	14. Mahallem güvenlidir.				0.742
	15. Mahallemdeki bir çok insana güvenebilirim.				0.697
	Eigenvalue	3.311	2.670	2.162	1.646
	Variance Explanation Rates %	22.071	17.802	14.412	10.973
	Croncbachs'Alpha (α)	0.709	0.797	0.860	0.813
	Total Variance Explanation Rate = 65.258 Kaiser Meyer Olkin (KMO) = 0.869 Bartlett's test value =3758.687 ***p*=0.001** Croncbachs'Alpha (α) =0.869				

df= 81). The model was fit at a satisfactory level, according to the fit indices (Table 3).

Root Mean Square Residual, IFI: Incremental Fit Index, CFI: Comparative Fit Index, GFI: Goodness-of-fit Index, TLI: Tucker–Lewis Index, **Good Fit

The model showed excellent fit values, as seen when the fit indices were analyzed in accordance with Table 3 (Scherer, Luther, Wiebe & Adams, 1998). Figure 1 depicts the model that was tested.

Table 4 lists the associations that came to light during the analysis conducted after the improvements were acquired. The sub-dimensions of the Perceived Neighborhood Disorder Scale showed a statistically significant positive connection ($p<0.05$).

The Perceived Neighbourhood Disorder Scale's sub-dimensions showed statistically significant positive relationships with one another ($p<0.05$). While there was a modest association between the Physical Order subscale and the Social Disorder subscale, there was a substantial correlation between the Physical Disorder subscale and the latter.

In general, in accordance with our findings, the questionnaire responses used to translate the Perceived Neighbourhood Disorder Scale into Turkish are a valid and trustworthy measurement tool.

To assess the scale's dependability, 87 participants were retested in the study. Table 5 displays the outcomes of the retest.

First test and post test internal consistency values of 87 participants are given in Table 5. Both the first test and the post test internal consistency coefficients were sufficient. When first test and post test values were compared with paired t test, there was no difference between first test and post test values. In addition, it was seen that the intraclass correlation coefficients were at a good level. Scale reliability was provided in the study.

Table 3: Statistical Values Regarding the Fit of the Structural Equation Model

Measurement	Good Fit	Acceptable Fit	Fit Index Values of the Model
(X^2/df)	≤ 3	≤ 4-5	2.433**
RMSEA	≤ 0.05	0.06-0.08	0.049**
SRMR	≤ 0.05	0.06-0.08	0.026**
IFI	≥ 0.95	0.94-0.90	0.969**
CFI	≥ 0.97	≥ 0.95	0.969**
GFI	≥ 0.90	0.89-0.85	0.957**
TLI	≥ 0.95	0.94-0.90	0.959**

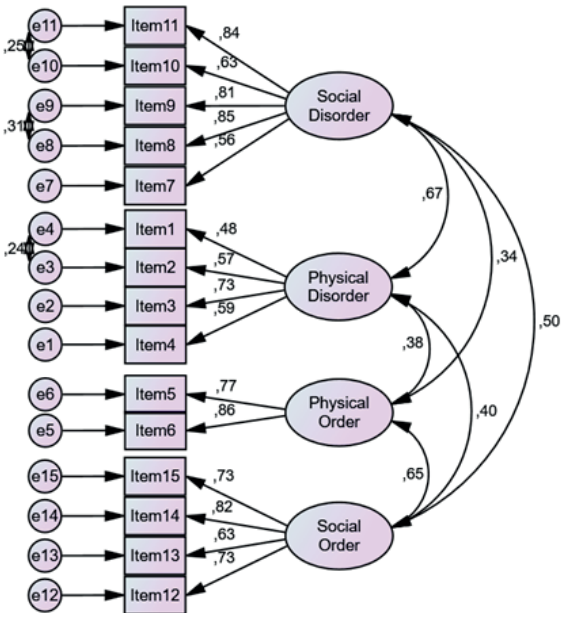

Figure 1: Structural Equation Model (SEM) for Interaction Between Four Subscales of Perceived Neighbourhood Disorder Scale

Table 4: Structural Equation Model Regression Weights Formed After Improvements Made According to Modification Indexes

Tested Path			Standardised Estimation (β)	Estimation (β)	Standard Error	Critical Value	*p*
Physical Disorder	<->	Social Disorder	0.668	0.149	0.019	7.886	**0.001**
Physical Disorder	<->	Physical Order	0.376	0.125	0.021	6.03	**0.001**
Physical Order	<->	Social Disorder	0.339	0.119	0.02	6.03	**0.001**
Physical Order	<->	Social Order	0.645	0.288	0.029	10.067	**0.001**
Social Disorder	<->	Social Order	0.5	0.15	0.019	7.718	**0.001**
Physical Disorder	<->	Social Order	0.4	0.114	0.018	6.272	**0.001**

Table 5: Test-Retest Results

	Cronbach alfa		Paired *t* test	*ICC*; *p*
	First test	Last test		
Physical Disorder	0.709	0.727	*t*=-0.218; *p*=0.828	*ICC*=0.700; *p*<0.001
Physical Order	0.797	0.811	*t*=0.520; *p*=0.604	*ICC* =0.802; *p*<0.001
Social Disorder	0.860	0.857	*t*=0.322; *p*=0.748	*ICC* =0.856; *p*<0.001
Social Order	0.813	0.831	*t*=-0.058; *p*=0.954	*ICC* =0.803; *p*<0.001
Whole Test	0.869	0.876	*t*=0.154; *p*=0.878	*ICC* =0.855; *p*<0.001

ICC: Intra-class correlation coefficient

Table 6: Relationships between the Perceived Neighbourhood Disorder Scale and its sub-dimensions

n=590		Physical Disorder	Physical Order	Social Disorder	Social Order
Physical Order	*rho*	0.262**			
	p	<0.001			
Social Disorder	*rho*	0.547**	0.321**		
	p	<0.001	<0.001		
Social Order	*rho*	0.287**	0.479**	0.441**	
	p	<0.001	<0.001	<0.001	
Whole Test	*rho*	0.680**	0.598**	0.830**	0.745**
	p	<0.001	<0.001	<0.001	<0.001

rho:Spearman correlation coefficient

Relationships Between Perceived Neighbourhood Disorder Scale and Subscales:

When Table 6 is examined; there is a positive 68% relationship between the Perceived Neighbourhood Disorder Scale (PNDS) and the Physical Disorder sub-dimension; there is a 60% positive relationship between PNDS and Physical Order sub-dimension; there is an 83% positive relationship between PNDS and Social Disorder sub-dimension; there is a 75% positive relationship between PNDS and Social Order sub-dimension. Being high level relationships, these were statistically significant (p <0.05).

There was a statistically significant difference between educational status and Social Disorder and General Scale score (p<0.05). In the social disorder subscale, there was a difference between individuals with middle school and university education. The average of individuals with university education was higher than individuals with middle school education. There was a difference between individuals with middle and high school education according to the general scale score. The average of individuals with high school education was higher than those with middle school education.

Physical Disorder and General Scale score and maternal education level differed statistically significantly (p<0.05). Individuals with a high school education scored on average lower on the physical disorder subscale than those who were illiterate or just attended primary school. According to the general scale score, university graduates had an average that was lower than those who were illiterate and only attended primary school.

Family income and Physical Disorder differed in a statistically significant way (p<0.05). The average of people whose income was more than their expenses was higher than that of people whose income was less than their expenses.

Social disturbance and family residence differed statistically significantly (p<0.05). Individuals in the

Table 7: Comparison of demographic variables with the general scale score and subscales

		Physical Disorder *mean±sd*	Physical Order *mean±sd*	Social Disorder *mean±sd*	Social Order *mean±sd*	Whole Test *mean±sd*
Sex	Female	7.45±2.27	4.50±1.44	8.78±3.27	8.70±2.53	29.44±6.99
	Male	7.59±2.39	4.52±1.64	8.79±3.31	8.94±2.87	29.85±7.71
	Test Statistics	*-0.813*	*-0.092*	*-0.079*	*-1.101*	*-0.921*
	p	*0,416*[€]	*0.927*[€]	*0.937*[€]	*0.271*[€]	*0.357*[€]
Education Status	Primary School	7.92±1.89	4.93±1.47	9.09±3.13[ab]	8.58±2.77	30.23±6.55[ab]
	Middle School	7.27±2.08	4.22±1.36	8.20±3.38[a]	8.45±2.34	28.16±7.02[a]
	High School	7.50±2.51	4.76±1.77	8.95±3.51[ab]	9.11±3.04	30.33±8.05[b]
	University	7.65±2.47	4.41±1.36	9.0±2.88[b]	8.90±2.53	29.97±6.93[ab]
	Test Statistics	*4,854*	*7.162*	*10.901*	*5.319*	*9.492*
	p	*0,184*[ψ]	*0.067*[ψ]	***0.012***[ψ ⋆]	*0.150*[ψ]	***0.023***[ψ ⋆]
Maternal Education Status	Illiterate	7.91±2.10[a]	4.80±1.27	8.88±1.95	9.02±2.39	30.62±5.72[a]
	Primary School	7.77±2.42[a]	4.64±1.56	9.01±3.29	9.07±2.76	30.51±7.38[a]
	Middle School	7.33±2.21[ab]	4.44±1.67	8.64±3.53	8.75±2.93	29.16±7.65[ab]
	High School	7.06±2.12[b]	4.37±1.49	8.58±3.29	8.46±2.62	28.49±7.11[ab]
	University	7.33±2.52[ab]	4.11±1.42	8.26±3.42	8.33±2.33	28.05±7.73[b]
	Test Statistics	*9.795*	*8.687*	*5.939*	*4.865*	*13.212*
	p	***0.044***[ψ⋆]	*0.069*[ψ]	*0.204*[ψ]	*0.301*[ψ]	***0.010***[ψ⋆]
Paternal Education Status	Illiterate	8.17±2.21	4.64±1.41	9.17±1.66	9.52±2.47	31.52±5.61
	Primary School	7.64±2.27	4.72±1.52	9.13±3.29	9.09±2.80	30.59±7.42
	Middle School	7.77±2.58	4.53±1.52	8.31±3.21	8.48±2.62	28.68±6.77
	High School	7.24±2.19	4.30±1.53	8.64±3.24	8.48±2.62	28.68±6.77
	University	7.43±2.38	4.43±1.61	8.73±3.49	8.92±2.78	29.53±8.08
	Test Statistics	*5.210*	*7.767*	*6.043*	*4.697*	*7.258*
	P	*0.266*[ψ]	*0.100*[ψ]	*0.196*[ψ]	*0.320*[ψ]	*0.123*[ψ]
Chronic Diseases Status	Yes	7.74±2.20	4.70±1.55	9.64±3.49	9.43±2.93	31.52±8.27
	No	7.51±2.35	4.49±1.55	8.70±3.26	8.77±2.69	29.48±7.27
	Test Statistics	*-1.058*	*-0.781*	*-1.963*	*-1.616*	*-1.649*
	P	*0.290*[€]	*0.435*[€]	*0.050*[€]	*0.106*[€]	*0.099*[€]
Family Income	Income less than expenses	7.58±2.24[ab]	4.66±1.79	8.90±3.01	9.02±3.37	30.18±7.92
	Income equal to expenses	7.66±2.37[a]	4.52±1.53	8.77±3.29	8.81±2.60	29.78±7.24
	Income more than expenses	7.08±2.23[b]	4.38±1.46	8.76±3.46	8.76±2.67	29.0±7.49
	Test Statistics	*6.665*	*2.038*	*0.898*	*0.536*	*3.483*
	P	***0.036***[ψ⋆]	*0.361*[ψ]	*0.638*[ψ]	*0.765*[ψ]	*0.175*[ψ]
Residency of the family	Village	7.16±2.44	4.54±1.71	8.05±3.38[a]	8.45±3.38	28.22±8.13
	Town	7.12±1.80	5.12±1.95	7.12±2.23[ab]	9.25±3.73	28.62±7.24
	District	7.40±2.17	4.86±1.61	9.18±3.28[b]	9.56±2.84	31.02±6.98
	Province	7.60±2.34	4.47±1.51	8.89±3.28[b]	8.82±2.57	29.78±7.28
	Test Statistics	*2.292*	*2.886*	*9.296*	*4.145*	*4.085*
	P	*0.514*[ψ]	*0.409*[ψ]	***0.026***[ψ⋆]	*0.246*[ψ]	*0.252*[ψ]
Family Type	Nuclear family	7.52±2.30	4.55±1.53	8.90±2.67[a]	8.90±2.64	29.88±7.22[a]
	Extended Family	7.42±2.41	4.31±1.55	7.97±3.28[b]	8.31±2.78	28.02±7.26[b]
	Separate parents	7.75±2.25	5.25±2.31	11.12±5.08[ab]	9.62±2.26	33.75±8.59[a]
	Parental Loss	8.66±3.0	4.66±1.65	10.0±3.87[ab]	9.66±3.16	33.0±1.42[ab]
	Test Statistics	*2.459*	*4.764*	*14.197*	*5.716*	*8.825*
	p	*.483*[ψ]	*.190*[ψ]	***.003***[ψ⋆]	*.126*[ψ]	***.032***[ψ⋆]

village had a lower average than those in the district and province.

Family type and the Social Disorder and General Scale score differed statistically significantly ($p<0.05$). In the social disorder subscale, those who belong to a nuclear family have higher averages than people who belong to an extended family. The average for those in extended families was, according to the general scale score, lower than the average for people in nuclear families with separate parents.

DISCUSSION

The Perceived Neighbourhood Disorder Scale contained four components in this study, which examined its reliability and validity in Turkey: physical order, physical disorder, social order, and social disorder. The components that were acquired were consistent with the scale's original specifications and with research that had previously used it. The scale's Turkish adaption was created using the scale's linguistic validity and structural validity. The language adaption of the scale was done using a group translation and rejection process. Three native Turkish speakers with English-language training participated in the group translation from Turkish to Turkish. The translations were then assessed, and a decision on the scale items was made in collaboration with the researchers and a subject matter expert who was an English linguist. Three English speakers with Turkish as their first language commissioned the back translation of the scale, and an expert English linguist was consulted.

The objective was to guarantee the scale's validity following linguistic adaption. According to Kadioğolu and Yıldız (2012), validity is the accurate measurement of a scale (Kadioğlu & Yıldız, 2012). For validity, component analysis and content validity were used. According to professional judgment, it was determined whether the scale's items were pertinent to the situation to be measured, appropriate for the Turkish population, appropriate for the scale's purpose, comprehensively reflective of the condition to be measured, and whether there was a significant flaw in the translation of the scale's items. Twenty academicians in the appropriate subject were asked to rate each item as "Not Suitable (1)," "Should be Corrected (2)," or "Suitable (3)" throughout the evaluation process.

The scale's reliability was assessed using the scale's internal consistency coefficients, time invariance, Bartlett's sphericity value, and corrected item correlation for each item. The capability of a measuring tool to make accurate measurements is known as reliability. In addition to determining the validity of the item, item-total correlations also establish a stable correlation between the test items that make up the scale and the scale as a whole. It is generally acknowledged that scales with item total correlations between 0.30 and 0.40 have strong discriminative ability (Erkuş, 2003). In our study, the corrected item correlations of items were found 0.30, and the discriminating power of the items in the scale was good. Another point to be checked for the reliability of the scale is the Cronbach's Alpha, in other words, the internal consistency coefficient of the scale. A Cronbach Alpha coefficient lower than 0.40 shows that it is not reliable, between 0.40-0.59 indicates low reliability, 0.60-0.79 indicates considerable reliability, and 0.80-1.00 indicates high reliability (Gözüm, 2003). The scale was created by Ross and Mirowsky in 1999 and had an internal consistency Cronbach's alpha value of 0.921 reliability, while the Turkish validity and reliability adaptation's alpha value was 0.869. The scale's internal consistency coefficient, which was modified in light of these findings, was quite similar to its initial value and supported the factor analysis of the sample's items.

The test-retest method is an additional factor to take into account for the validity of the scale. 87 participants participated in the adaptation's test-retest, and the correlation coefficients that were acquired were determined to be reasonably near to one another. According to Şencan (2005), a correlation coefficient that is near to 1 means that the test does not alter over time (Şencan, 2005). The first test internal consistency value in our study was 0.869, and the last test internal consistency coefficient was 0.876, indicating a strong correlation between measurements taken at various times and leading to the conclusion that the scale was time-invariant (Table 8).

Table 8: Relationships between the variables of residence duration, the number of people in the family and the number of children in the family, and the general scale score and subscales

n=590		Physical Disorder	Physical Order	Social Disorder	Social Order	Whole Test
Residence duration	*rho*	0.002	-0.011	-0.076	-0.042	-0.051
	p	0.967	0.792	0.064	0.308	0.214
Number of people in the family	*rho*	-0.022	-0.015	**-0.155**	-0.061	**-0.102**
	p	0.598	0.717	**0.001**	0.139	**0.013**
The number of children in the family	*rho*	0.020	0.056	**-0.087**	-0.016ζ	-0.026
	p	0.627	0.172	**0.035**	0.705	0.526

CONCLUSION

According to the findings obtained from our study, the internal consistency coefficient and test correlation coefficient of the items of the Turkish version of the Perceived Neighbourhood Disorder Scale are similar to the original and it is seen that the scale has construct validity. The Perceived Neighbourhood Disorder Scale is thought to guide future studies to evaluate individuals' perceptions of their health in personal and social environment.

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APPENDIX

Algılanan Mahalle Düzensizliği Ölçeği (AMDÖ)	Hiç Katılmıyorum	Katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
Fiziksel Düzensizlik				
1 Mahallemde birçok duvar yazısı var.				
2. Mahallem gürültülüdür.				
3. Mahallemde vandalizm (şiddet eylemleri) yaygındır.				
4. Mahallemde bir çok terkedilmiş bina var.				
Fiziksel Düzen				
5. Mahallem temizdir.				
6. Mahallemdeki insanlar ev ve apartmanlarına iyi bakarlar.				
Sosyal Düzensizlik				
7. Evimin yakınlarında aylak aylak dolaşan bir çok insan var.				
8. Mahallemde çok fazla uyuşturucu kullanımı var.				
9. Mahallemde çok fazla alkol kullanımı var.				
10. Komşularımla sürekli sorun yaşarım.				
11. Mahallemde çok suç işlenmektedir.				
Sosyal Düzen				
12. Mahallemde insanlar birbirine göz kulak olur.				
13. Mahallemde polis koruması yeterlidir.				
14. Mahallem güvenlidir.				
15. Mahallemdeki bir çok insana güvenebilirim.				